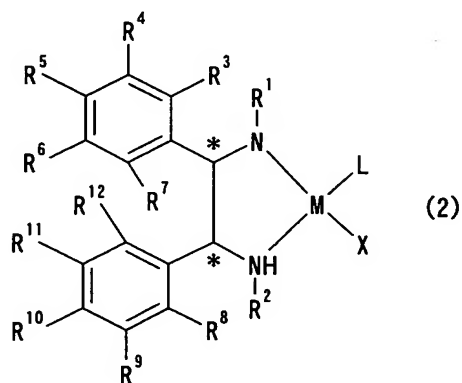


## ABSTRACT

The present invention provides a water-soluble transition metal-diamine complex which can be easily separated from reaction products through liquid separation, etc. and is recycleable; an optically active diamine compound constituting the ligand of the complex; and a catalyst for asymmetric synthesis which comprises these. The present invention relates to a water-soluble optically active transition metal-diamine complex represented by the formula (2):



[wherein  $R^1$  and  $R^2$  each represents hydrogen, a hydrocarbon group,  $-\text{SO}_2R^{13}$  (wherein  $R^{13}$  is a hydrocarbon group, substituted amino, etc.), etc.;  $R^3$  to  $R^{12}$  each represents hydrogen, a hydrocarbon group, alkoxy, substituted amino, etc.; M represents a transition metal; X represents halogen; L represents a ligand; and \* indicates an asymmetric carbon atom; provided that at least one of  $R^3$  to  $R^7$  and  $R^8$  to  $R^{12}$  is substituted amino], a catalyst for asymmetric synthesis containing the complex, and a process for producing an optically active alcohol, which comprises using the catalyst to asymmetrically reduce a ketone.